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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/590,517

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Takashi Shimono

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EXAMINER

SANEI, MONA M

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/590,517	Applicant(s) SHIMONO, TAKASHI	
	Examiner MONA M. SANEI	Art Unit 2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 August 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/24/06</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 5 is objected to because of the following informalities: on line 4, “enlargement” should be spelled - -enlargement- -. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 2, 3, and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 2, lines 7-8, the phrase “a tomographic image” is indefinite insofar as it is unclear whether the limitation is referring to a new tomographic image or to the tomographic image of parent claim 1, line 7.

In claims 3 and 6, line 2, the word “it” is indefinite insofar as it is unclear what the word is referring to.

In claim 6, line 2, the phrase “the tomographic image” lacks proper antecedent basis insofar as it is unclear whether the phrase is referring to the tomographic image of claim 1, line 7 or to the tomographic image of claim 2, lines 7-8.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Fujii et al. (US 5594768).

Regarding claim 1, Fujii et al. teaches a system comprising an x-ray tomograph (see figure 52), an x-ray generator (91) having a function of moving a focal position (col. 1, lines 31-32) and radiating x-rays toward a subject (92), an x-ray image receiving element (94) for receiving a plurality of transmission images of the subject formed by the x-rays radiated from the x-ray generator while the focal position is moved (col. 1, lines 32-34), and an image processing section for creating a tomographic image by processing the plurality of transmission images of the subject received by the x-ray image receiving element (col. 1, lines 32-37).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujii et al. as applied to claim 1 above, and further in view of Lambert et al. (US 4105922).

Fujii et al. teaches a system as recited above. Fujii et al. further teaches that the x-ray generator is configured to make the focal position movable on a circumference (col. 1, lines 31-32) and wherein the image processing section accumulates the transmission images of the subject corresponding to individual focal positions of the x-ray generator to create an accumulated image (col. 1, lines 32-41).

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However, Fujii et al. fails to teach that the image processing section extracts pixels having a brightness value of the accumulated image between a prescribed upper limit threshold value and a lower limit threshold value to create a tomographic image.

Lambert et al. teaches an image processing section (20) that extracts pixels having a brightness value of the accumulated image between a prescribed upper limit threshold value and a lower limit threshold value to create a tomographic image (col. 6, lines 11-34).

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the image processing section of Fujii et al. to include the feature suggested by Lambert et al. since one would have been motivated to make such a modification provide higher resolutions for signal levels (col. 6, lines 24-34) as implied by Lambert et al.

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujii et al. as applied to claim 1 above, and further in view of Eberhard et al. (US 5278884).

Fujii et al. teaches a system as recited above.

However, Fujii et al. fails to teach that the system is configured to create the tomographic image of the subject for each of a plurality of tomographic planes which intersect in prescribed directions and are different from one another.

Eberhard et al. teaches a system that is configured to create a tomographic image of a subject (14) for each of a plurality of tomographic planes (30F, 30R, 30S, 30T) which intersect in prescribed directions and are different from one another (see figure 3).

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the system of Fujii et al. to include the features suggested by Eberhard et al.

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since one would have been motivated to make such a modification to provide a three dimensional image of the subject (col. 2, lines 29-32) as implied by Eberhard et al.

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable in view of Fujii et al. and Matsuda et al. (US 3973127).

Fujii et al. teaches a system as recited above.

However, Fujii et al. fails to teach a stereoradioscopic image constructing section for creating a stereoradioscopic image by processing the plurality of tomographic images obtained by the x-ray tomograph.

Matsuda et al. teaches a stereoradioscopic image constructing section for creating a stereoradioscopic image (col. 6, line 22) by processing a plurality of tomographic images obtained by an x-ray tomograph (col. 6, line 18-23).

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the system of Fujii et al. to include the feature suggested by Matsuda et al. since one would have been motivated to make such a modification to provide an image with the perception of depth, thus providing a different perspective in which the subject can be analyzed.

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujii et al. and Matsuda et al. as applied to claim 4 above, and further in view of Niwa et al. (JP 2003-024320).

Fujii et al. as modified above suggests a system as recited above.

However, Fujii et al. fails to teach that the stereoradioscopic image constructing section corrects geometrical enlargement ratios of the plurality of tomographic images obtained by the x-ray tomograph and combines the corrected tomographic images to create a stereoradioscopic image.

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Niwa et al. teaches an enlargement ratio correcting means for correcting the enlargement ratio of an x-ray image (see translated abstract).

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the stereoradioscopic image constructing section of Fujii et al. as modified above to correct the geometrical enlargement ratios of the plurality of tomographic images before combining them to create the stereoradioscopic image as suggested by Niwa et al. since one would have been motivated to make such a modification to provide a more meaningful stereoradioscopic image.

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujii et al. and Lambert et al. as applied to claim 2 above, and further in view of Eberhard et al. (US 5278884).

Fujii et al. as modified above suggests a system as recited above.

However, Fujii et al. fails to teach that the system is configured to create the tomographic image of the subject for each of a plurality of tomographic planes which intersect in prescribed directions and are different from one another.

Eberhard et al. teaches a system that is configured to create a tomographic image of a subject (14) for each of a plurality of tomographic planes (30F, 30R, 30S, 30T) which intersect in prescribed directions and are different from one another (see figure 3).

It would have been obvious to one having ordinary skill in the art at the time of the invention to further modify the system of Fujii et al. to include the features suggested by Eberhard et al. since one would have been motivated to make such a modification to provide a three dimensional image of the subject (col. 2, lines 29-32) as implied by Eberhard et al.

Conclusion

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MONA M. SANEI whose telephone number is (571)272-8657.

The examiner can normally be reached on M-W 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward J. Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mona M Sanei/
Examiner, Art Unit 2882

/Edward J Glick/
Supervisory Patent Examiner, Art Unit 2882